

REMARKS

Claims 21-30, 32, 46, 47, and 49-51 are pending in the application with claim 31 cancelled herein and claim 48 indicated herein as cancelled.

Applicant herein corrects claims 31 and 48 by amendment, overcoming the objections of record.

Claims 46 and 47 stand rejected under 35 U.S.C. 102(b) as being anticipated by Hays ('477). Claims 46 and 47 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Hays. Applicant requests reconsideration.

Claim 46 sets forth a method of forming a phase change ink that includes, among other features, reacting at least one monohydric, fused-ring alcohol with at least one monomeric isocyanate and producing a non-polymeric urethane resin from the reacting. The fused-ring alcohol includes at least three fused rings. Pages 3-4 of the Office Action allege that Hays discloses or suggests every limitation of claim 46. Applicant traverses.

Applicant notes that claim 43 expressly sets forth one reactant as at least one monohydric, fused-ring alcohol including at least three fused rings. Claim 43 expressly sets forth the other reactant as at least one monomeric isocyanate. Hays fails to disclose a reaction involving the two reactants specified in claim 46. Further, Applicant asserts that modifying Hays to allow for such a reaction would frustrate the intended purpose of Hays.

Applicant acknowledges that column 7, lines 23-26 of Hays lists hydroabietyl alcohol, which is a monohydric, fused-ring alcohol. Applicant also acknowledges that column 8, lines 13-20 Hays lists a variety of

monomeric isocyanates. However, Hays does not disclose or suggest any reaction of hydroabietyl alcohol with a monomeric isocyanate.

At least column 1, lines 10-25 and column 4, lines 7-49 expressly describe the reaction product of Hays as resulting from reaction of a diisocyanate with a diol and/or diamine. That is, the second reactant is dihydric, not monohydric, as claimed. The only reaction described in Hays that includes hydroabietyl alcohol (or, for that matter, any other monohydric alcohol) involves its use as a capping agent by reacting with a intermediate diisocyanate oligomer, such as the oligomer shown in column 4, lines 10-20 of Hays (but without the "CAP" moiety). By definition, such oligomer cannot be considered monomeric, as claimed. At least for such reasons, Applicant asserts that Hays fails to anticipate claim 46.

Page 4 of the Office Action asserts that it would be obvious simply to combine Hays' diol, diisocyanate, and hydroabietyl alcohol in a one-shot process and that it is *prima facie* obvious to select any order of mixing ingredients or performing process steps. Applicant traverses on the grounds that such modification would frustrate the intended purpose of Hays.

The mere fact that the prior art can be modified does not make the modification obvious "unless the prior art suggested the desirability of the modification." In re Gordon, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). Accordingly, if a proposed modification of the prior art would render the prior art device or process "inoperable for its intended purpose" or change the principle of operation of the prior art invention being modified, then no

suggestion or motivation exists to make the proposed modification. Id.; In re Ratti, 270 F.2d 810, 123 USPQ 349 (CCPA 1959); MPEP § 2143.01.

Applicant notes that the formula set forth in column 4, lines 10-20 includes a value "n", which is an integer from 3 to 15, representing the degree of oligomerization. Consequently, the repeating unit enclosed within brackets in such formula repeats at least two times up to 14 times. Even for the circumstance where the repeating unit only repeats two times, it includes two of the moieties shown as X--DI--X. As may be appreciated at least from column 5, line 29 to column 6, line 6 of Hays, the components of the X--DI--X moiety originate from the diol or diamine reactant. It is readily apparent that both of the two alcohol or amine moieties of the respective diol or diamine reactants are required to be present to link the other components of the oligomer on either side of the X--DI--X moiety shown in the oligomer formula of column 4.

If a monohydric alcohol were used instead of the described diol, then a molecule exhibiting the oligomer formula could not be formed. It follows that if the Hays' diol, diisocyanate, and hydroabietyl alcohol are combined in a one-shot process, then a competing reaction will occur between the hydroabietyl alcohol and the diisocyanate. Thus, the hydroabietyl alcohol will interfere with the reaction between the diol and diisocyanate intended to form the oligomer. The teachings of Hays then become irrelevant in column 4, lines 23-49, column 6, lines 16-26, and column 7, lines 50-61 regarding how to achieve a desired degree of oligomerization between 3 and 15.

Instead, it is entirely uncertain based on the teachings of Hays what proportion of oligomers will result, instead of polymers or dimers, or whether any oligomers will result. Column 4, lines 30-36 of Hays requires at least 25 weight percent oligomer with preferably 90 weight percent oligomer. Clearly then, a one-shot reaction as proposed in the Office Action would frustrate the intended purpose of Hays. At least for such reason, no motivation may be considered to exist to modify Hays in the manner alleged in the Office Action. Claim 46 is thus patentable.

Claim 47 depends from claim 46 and is patentable at least for such reason as well as for the additional limitations of such claim not disclosed or suggested.

Applicant herein establishes adequate reasons supporting patentability of claims 21-30, 32, 46, 47, and 49-51 and requests allowance of all pending claims in the next Office Action.

Respectfully submitted,

Dated: 24 June 2008

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